

## INTERNATIONAL SEARCH REPORT

IB2004/052857

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 G01R31/30 G01R33/09 G01R15/20 G11C11/15

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01R G11C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC, IBM-TDB

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category <sup>a</sup>	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 300 617 B1 (DAUGHTON JAMES M ET AL) 9 October 2001 (2001-10-09)	1-3,6-9, 15-21, 23,24, 30-33 20
Y	abstract; figures 1A,2b,4 column 4, line 16 - column 7, line 6 column 10, line 50 - column 13, line 29 -----	
A	PELEGRI J ET AL: "Spin-valve current sensor for industrial applications" SENSORS AND ACTUATORS A, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. 105, no. 2, 15 July 2003 (2003-07-15), pages 132-136, XP004428582 ISSN: 0924-4247 abstract; figures 1-3 page 1 ----- -/-	1-28,303

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

## ° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

29 March 2005

Date of mailing of the international search report

11.02.2005

Name and mailing address of the ISA

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 144 214 A (ATHAN ET AL) 7 November 2000 (2000-11-07)	20
A	abstract -----	1-28, 30-33
A	EP 0 710 850 A (INTERNATIONAL BUSINESS MACHINES CORPORATION) 8 May 1996 (1996-05-08)	1-28, 30-33
A	abstract ----- US 5 708 407 A (MOUCHOT ET AL) 13 January 1998 (1998-01-13)	1-28, 30-33
	cited in the application abstract -----	

# INTERNATIONAL SEARCH REPORT

PCT/IB2004/052857

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-28, 30-33

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.  
 No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-28,30--33

These Claims concern methods and apparatus for built-in current measurements in a semiconductor device (by using a magnetic tunnel junction)

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2. claim: 29

This Claim concerns a software product for job management comprising the step of measuring currents and setting a flag.

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## INTERNATIONAL SEARCH REPORT

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 6300617	B1	09-10-2001	AU CA EP JP WO	2897099 A 2320311 A1 1068541 A1 2003526083 T 9945405 A1		20-09-1999 10-09-1999 17-01-2001 02-09-2003 10-09-1999
US 6144214	A	07-11-2000	AU WO	7736396 A 9718481 A1		05-06-1997 22-05-1997
EP 0710850	A	08-05-1996	US AT AU BR CA CN DE EP JP JP KR TW	5561368 A 289419 T 1788295 A 9504583 A 2158304 A1 1113572 A ,C 69534013 D1 0710850 A2 3017061 B2 8226960 A 175979 B1 487169 Y		01-10-1996 15-03-2005 09-05-1996 20-05-1997 05-05-1996 20-12-1995 24-03-2005 08-05-1996 06-03-2000 03-09-1996 01-04-1999 11-05-2002
US 5708407	A	13-01-1998	FR DE DE EP WO JP	2710753 A1 69407194 D1 69407194 T2 0721670 A1 9509447 A1 9503297 T		07-04-1995 15-01-1998 28-05-1998 17-07-1996 06-04-1995 31-03-1997